COMMUNICATIONS EQUIPMENT SOFTWARE NOTE 4 (for Electronics Technicians)
Maintenance Branch
W/OPS12:  GSS


| | | |
|---|---|---|
| SUBJECT | : | CRS Build 9.0 and VIP Build 3.0.1 Software Installation Procedures |
| PURPOSE | : | This document contains the procedures for installing the Console Replacement System (CRS) Build 9.0 software and the Voice Improvement Processor (VIP) Build 3.0.1 software.  The tasks necessary for installing the CRS and VIP software are included in Attachment A. |
| SITES AFFECTED | : | All CRS Sites |
| EQUIPMENT AFFECTED | : | CRS (B440) |
| PARTS REQUIRED | : | W/OPS12 will issue the following parts to each site under the applicable approved site-specific Request for Change.<br><br>1 - CRS Build 9.0 Installation CD<br>7 - VIP Installation CDs labeled "VIP OS Restore 1 through 7" |
| PARTS SUPPLIED BY THE SITE | : | 2 - Blank diskettes for saving VIP Version 2.0.2 dictionaries<br>2 - VIP Recovery Diskettes labeled "VIP OS Restore 1 and 2"<br>    (These diskettes were issued as part of the original equipment<br>    deliverables.  If they cannot be located, use two blank diskettes<br>    and follow the instructions in this note for recreating them.)<br>2 - Blank DOS-formatted diskettes labeled "VIP OS Restore 3 and 4"<br>    (This note provides instructions for creating these diskettes.) |
| TOOLS AND TEST EQUIPMENT REQUIRED | : | None. |
| TIME REQUIRED | : | 4.0 hours through Part 8.  Part 9 need not be performed immediately. |
| EFFECT ON OTHER INSTRUCTIONS | : | None. |
| AUTHORIZATION | : | The authority for this modification is Request for Change AB278. |

| VERIFICATION STATEMENT | : | This procedure was tested and verified at National Weather Service Headquarters (WSH), Silver Spring, MD (SLVM2). |
|---|---|---|
| GENERAL | : | This procedure contains instructions for replacing the CRS and VIP software. |
| TECHNICAL ASSISTANCE | : | For questions or problems pertaining to this software note, please contact Nancy Helderman at (301) 713-0191, x139 or Joel Nathan at (301) 713-0191, x119. |
| PROCEDURE | : | Attachment **A** provides procedures for implementing this modification. Attachment **B** provides a completed sample of an EMRS report. |
| REPORTING INSTRUCTIONS | : | Report the completed modification using the Engineering Management Reporting System (EMRS) according to the instructions in NWS Instruction 30-2104, Maintenance Documentation, Part 4 and Appendix G.  Include the following information on the EMRS report: |

    a.  An equipment code of **CRSSA** in block 7.
    b.  A serial number of **001** in block 8.
    c.  A modification number of **S4** in block **17a**.

    A sample EMRS report is provided as attachment **B**.

Mark S. Paese
Director, Maintenance, Logistics, and Acquisition Division

Attachment **A** - Installation Procedures
Attachment **B** - Sample EMRS Report

# Attachment A

# Installation Procedures

# Attachment A
# Installation Procedures

**NOTE:** No changes have been made to the current CRS Build 8.5 operational database. Therefore, you will be able to use your old database with the new Build 9.0 CRS software.  After installing the new software, you will be able to restart the CRS application software and run it with the old database.  No changes to the database are necessary.

## Overview

This software note provides instructions for performing the CRS and VIP software upgrades. The installation procedure contains eight parts; the ninth part covers the loading and testing of the VIP Dictionaries.

1. Pre-Installation Procedures
2. Termination of the CRS Build 8.5 Application Software
3. Installation and Verification of CRS Build 9.0 Application Software and Execution of Sendmail Update Script
4. CRS Application Startup and Verification
5. Backup of VIP Pre-Processor Substitution and Local Dictionaries (requires 2 blank diskettes)
6. Creation of VIP OS Restore Diskettes (requires 2 to 4 blank diskettes)
7. Shutdown of VIP Build 2.0.2 Operating System
8. Installation and Startup of VIP Operating System (Red Hat Linux Build 7.3) and Build 3.0.1 Application Software
9. Loading of VIP 2.0.2 Dictionaries and Testing of Word Pronunciation

**NOTE:** Make sure you have the following before proceeding with the installation procedures:

1 - CRS Build 9.0 Installation CD (provided by W/OPS12 in delivery package)

7 - VIP Installation CDs labeled "VIP OS Restore 1 through 7" (provided by W/OPS12 in delivery package)

2 - Blank diskettes for saving VIP Version 2.0.2 dictionaries

2 - VIP Recovery Diskettes labeled "VIP OS Restore 1 and 2"   (These diskettes were issued as part of the original equipment deliverables.  If they cannot be located, use two blank diskettes and follow the instructions in this note for recreating them.)

2 - Blank DOS-formatted diskettes labeled "VIP OS Restore 3 and 4"   (This note provides instructions for creating these diskettes.)

## PART 1 – PRE-INSTALLATION PROCEDURES

### 1.1    Scheduling CRS Downtime

1.    Schedule 4 hours (1 hour for CRS installation and 3 hours for VIP installation) to perform the software installation procedures.  This does not include Part 9, which needs to be performed as soon as is reasonably possible.  This is a conservative estimate; the actual installation time may be less, or it may be more if you encounter problems.

2.    Notify the public that CRS (NOAA Weather Radio) will be down during this scheduled time for maintenance.

3.    Before proceeding with the modification, read the entire procedure.

4.    If you are currently logged into the *CRS Main GUI*, skip to step 7.  Otherwise, the *CRS Security Warning* message window displays.

5.    Click **Acknowledge** and the *CRS Login* screen displays.

6.    Log into the *CRS Main GUI* as **admin**.  The *Security Warning* window redisplays after 30 seconds if a user ID and password are not entered.

7.    From the *CRS Main GUI*, click **Maintenance** and then click **UNIX Shell**.

8.    Enter the following command at the *UNIX* prompt:

      **ping -s 5MP**

      Press **<Enter>**.  Every second a message displays that 64 bytes have been received from 5MP.  After 1 minute, terminate the test by pressing the **<Del>** key.  A message displays how many data packets were received and transmitted and the percentage of packet loss.  If the number of packets received does not match the number transmitted and/or the percentage of packet loss is not zero (0), stop this procedure, and identify and correct the source of the data loss.

9.    Repeat step 8 for all remaining FEPs and 4BKUP.

10.   Enter the following command at the **UNIX** prompt to close the *UNIX Shell*:

      **exit**

      Press **<Enter>**.


## PART 2 – TERMINATION OF THE CRS BUILD 8.5 APPLICATION SOFTWARE

### 2.1    Validating and Verifying the CRS Database

**NOTE:**    Before beginning the procedure, verify that the operational database is not corrupted by stopping and restarting the CRS application.

1. On a blank part of the desktop, click and hold the **left mouse button** to pop up the *CRS Utilities* menu. Select **XCRS_SITE Utility**, and release the mouse button. The *XCRS_Site Configuration Developer* window displays.

2. Click **Stop CRS System**. The system displays:

   *The CRS System will be STOPPED. Continue?*

3. Click **OK**. Wait for the CRS application to stop. All status icons in the system status window indicate *Red Down*.

4. To start the *CRS Build 8.5 Application* from the *XCRS_Site Configuration Developer* window, click the **Start CRS System** button. The system displays:

   *The CRS System will be STARTED. Continue?*

5. Click **OK**. Wait until the *watch* icon disappears to indicate that CRS is initiating. Then close the *XCRS_Site Configuration Developer* window by clicking **Exit**.

6. Verify that the system is operational by checking the *System Status* window. If the system does not start properly, the database needs to be restored by either installing a previous backup (*Database Backup/Recovery Window*) or reloading the *daily.ASC* ASCII database file from the *XCRS_Site Configuration Developer*. Once the system starts properly, proceed with the next step.

## 2.2 Terminating the CRS Application

1. On a blank part of the desktop, click and hold the **left mouse button** to pop up the *CRS Utilities* menu. Select **XCRS_SITE Utility**, and release the mouse button. The *XCRS_SITE Configuration Developer* window displays.

2. Click the **Stop CRS System** button. The system displays:

   *The CRS system will be STOPPED. Continue?*

3. Click **OK**. Wait for the CRS application to stop. All status icons in the *System Status* window indicate *RED Down*. Close the *XCRS_SITE Site Configuration Developer* window by clicking the **Exit** button.

## PART 3 – INSTALLATION AND VERIFICATION OF CRS BUILD 9.0 APPLICATION SOFTWARE AND EXECUTION OF SENDMAIL UPDATE SCRIPT

### 3.1 Installing CRS Software Build 9.0 From the CD-ROM

1. On the *Main CRS* menu, click **System** to access the *System* pull-down menu.

2. Click **Exit to UNIX** in the *System* pull-down menu. The *Wish to exit CRS Control Interface?* window displays. Click **OK** to exit the Control Interface.

3. CRS displays the *Security Screen* on top of the login window. Click **Acknowledge** to continue the login process.

4.     At the *Login GUI* window, login as the root user.  Click **KDE Desktop Application Starter** (the big **K Wheel** icon) in the lower left section of the *KDE Desktop* panel.

5.     Click **SCO Control Center** on the pop-up menu.

**NOTE:**     1.  You may also start the *SCO Control Center* by clicking **SCO Admin** (**Swiss Army Knife** icon) on the *KDE Desktop* panel.

6.     Double-click **Software_Management**.

7.     Double-click **Applications Installer**.

8.     Insert the CRS Build 9.0 CD-ROM into the CD drive of the selected installation MP, then select **CD-ROM_1** from the *Install from:* prompt in the upper half of the *Application Installer* window.  If the files are not automatically read, click **Update View**.

9.     After the CRS application package icons (*crsopsais*, *crsopsfpm* and *crsopsmpm*) are displayed immediately below the *Install from:* prompt, select **crsopsais**, and click **Install**.

**NOTE:**     2.  *crsopsfpm* and *crsopsmpm* can only be installed <u>indirectly</u> through *crsopsais*.

10.    Respond to the prompts displayed in Part 3.2, "Responding to Installation Prompts."

**NOTE:**     3.  The *Add Application: crsopsais* window and the *auto-install* window display the installation activity log and prompts for the installation operator.  The log information and the prompt sequences will vary depending on the responses to the prompts.

4.  In some instances, the installation process may erroneously come to a halt

following the completion of the installation on 0MP.  If you receive no further messages, the software was not installed on 5MP or any of the FEPs.  If this occurs, terminate the installation, shut down 0MP, and repeat section 3.1.

## 3.2    Responding to Installation Prompts

**NOTE:**    1.  The installation prompts that follow assume a typical configuration (0MP, 5MP, 1FEP, and 4BKUP).

2.  The prompt sequence begins with *prompt p1*.  Unless otherwise indicated, prompts occur in sequence (*p1 ... p12*).

*p1*    *Build [version] installation options* (default: a)
   ***a*** - *all processors (0MP 5MP 1FEP 4BKUP | 5MP 0MP 1FEP 4BKUP)*
   ***f*** - *front-end processors (1FEP 4BKUP)*
   ***m*** - *MPs (0MP 5MP | 5MP 0MP)*
   ***s*** - *specific processor*
   ***x*** - *exit*

Select the installation default (option **a**) to load the software on all processors.  Press **<Enter>** to select the installation option.

If it is determined that the IP addresses in */etc/inet/hosts* (<u>preinstalled by the CRS software contractor at the factory</u>) are not correct, then prompt *p2* displays.

*p2*    *Enter your CRS site ID* (e.g., DLH or NRC1):

Enter the correct local site ID.  Entry of a valid site ID results in a comparison of a set of expected IP addresses and the actual IP addresses in */etc/inet/hosts* on all accessible (online) CRS processors.  Differences between expected and actual IP addresses are displayed and logged.  The entry of an invalid site ID results in the display of prompt *p2* again.  If only the **<Enter>** key is pressed, the *p3* prompt will be displayed.  Otherwise, the *p4* prompt will be displayed.

*p3*    *Display a list of all valid CRS site IDs? (default: y)*

An affirmative response (y) to this prompt results in the display of a list of all valid CRS site IDs and their associated site locations (city, state, region).  The list is presented in "pages" via the *UNIX* utility "pg".  Press RETURN or "+" to display the next page, press "-" to display the previous page, and press "q" to redisplay prompt *p2*.  A negative response (n) results in the redisplay of prompt *p2*.

*p4*    *Enter password for the CRS user in the CRS system.*

The installer will then be prompted to verify the password with the following:

*Re-enter password*

**NOTE:** 2. *(continued)*

    p5    *Clean out (reset) log files? (default: y)*

An affirmative response (y) to this prompt results in the resetting of all the CRS application software log files on all the processors in the configuration.  A negative response (n) results in no changes to the CRS log files on any of the processors.  It is normally good practice to clean the log files when a new software release is installed.

    p6    *Change CRS system date and time? (default: n)*

An affirmative response (y) to this prompt results in a sequence of additional prompts beginning with *p7*.  The entered date will be used to change the date and time on all the processors.  A negative response (n) results in no changes to the current system date and time (displayed prior to the prompt); the next prompt will be *p12*.

    p7    *Enter year* (e.g., 1997):

    p8    *Enter month* (e.g., 01<=mm<=12):

    p9    *Enter day* (e.g., 01<=dd<=31):

    p10   *Enter hour* (e.g., 00<=HH<23):

    p11   *Enter minute* (e.g., 00=MM<=59):

    p12   *Build [version] will be installed on the following processors:*

*[0MP | 5MP | 1FEP | 4BKUP ...]*

*with the following options:*

*Detected configuration is typical*

*[0MP / 5MP] remains CRS master (and X-window client) [0MP / 5MP] remains CRS shadow (and X-window server)*

*Log files will be cleaned (reset on [5MP 0MP 1FEP 4BKUP]*

*New crs user password will be embedded in the /crs/bin/ftp.ksh on:0MP 5MP*

*Proceed with Build [version] installation? (default: y)*

An affirmative response (y) to this prompt results in the installation of the CRS application software with the appropriate constraints indicated.  A negative (n) response results in the display of a *Message* dialog window with the text: *User does not have permission to install packages pkgadd*. Clicking **OK** terminates the installation.

**NOTE:** 3. The master and shadow states that exist on the MPs at the time of installation should be preserved, if possible.  Otherwise, the installation scripts determine new MP states, based on the old MP states, whether software is being installed on them and/or they are online.

4. The installation process will take approximately 15 to 20 minutes.


## 3.3    Post-Installation Caveats and Conventions

**NOTE:** 1. Software is installed on CRS processors in a predefined sequence (MPs, then FEPs).  When the software has been successfully installed on a processor other than the installation MP, that processor is automatically shut down (and restarted).  Because the FEPs share a single console (monitor and keyboard), only one of the FEPs—the one to which the console is physically connected through the switch box—starts itself automatically, following the shutdown.  The startup sequence on an FEP that is not connected to a keyboard pauses while waiting for an **F1** key to be pressed at the keyboard.  To complete the startup sequence for an FEP that is "stuck" waiting for the **F1** key to be pressed, connect (via the switch box) the keyboard to the FEP, verify that it is waiting (prompt message on the monitor), and press the **F1** key.

While the installation is in progress, many messages are displayed in the *auto-install log* window on the console.

Messages are of three types:  ERROR, INFO and WARNING.  Most of these messages are also written to the installation log file (/crs/install.log).

All error and warning messages from the installation log file are displayed in the *auto-install log* window at the completion of installation, in the following format:

    Installation ERRORS
    [ERROR messages from the installation log file | None ]
    [Refer to the installation procedures for further assistance]
    Installation WARNING
    [WARNING messages from the installation log file | None]

    [Refer to section 3.4 for further assistance].

2. Inspection of the */crs/install.log* file, after installation of the CRS Build 9.0 software, may result in the following message:

*UX:lpadmin: WARNING: "/dev/term/a02s" is accessible by others*

This warning can be ignored.

1.      Press **<Enter>** to continue.  The system displays the following:

*Continue [0MP | 5MP] shutdown? (Default: y)*

**NOTE:**  3.  Shutting down the installation MP [0MP | 5MP] is an option.  It is not necessary to shut down after the software has been installed on an FEP.  A shut down is RECOMMENDED after CRS software has been installed on an MP to ensure that the installation MP [0MP | 5MP] and the other MP [0MP | 5MP] are functionally synchronized as CRS master and CRS shadow.

2.      Press **<Enter>**.

**NOTE:**  4.  If valid errors and warnings are displayed, error and warning messages must be resolved before attempting to start the system.

If there are no error or warning messages (i.e., the installation log displays "None"), the reference to the installation procedures (see Note 1 above) is not displayed.  The *auto-install log* window displays until the operator responds to the prompt noted in step 1.

An affirmative response (**y** or **<Enter>**) results in the automatic shutdown and restart of the installation MP.

A negative response (**n**) results in the disappearance of the prompt and the *auto-install log* window unless the state (master or shadow) of the installation MP has been changed, in which case the prompt *Shutting down to synchronize MP functionality* informs the operator that the installation MP will be shutdown. (Shutdown occurs when the operator presses any key.)

## 3.4 Viewing the Installation Log File

**NOTE:** Results of the installation are logged into the *auto-install* window and into a log file (*/crs/install.log*).  Logged messages are of three types:  ERROR, INFO, and WARNING.  INFO messages can be ignored.  ERROR and WARNING messages are summarized in the *auto-install* window at the completion of the installation.  They must be resolved before the system is started.

All logged messages have the following format:

*date: script: type: [...] on PROC*

where:

| | | |
|---|---|---|
| *date* | = | DDD MMM dd hh:mm:ss LLL YYYY |
| | | DDD    day of week abbreviation (e.g., Thu = Thursday) |
| | | MMM   month of year abbreviation (e.g., Sep=September) |
| | | dd  numeric day of month (e.g., 1<dd<31) |
| | | hh  hour of the day in military format (e.g., 00<hh<23) |
| | | mm    minute of the hour (e.g., 00<mm<59) |
| | | ss  second of the minute (e.g., 00<ss<59) |
| | | LLL    local standard time (e.g., PDT = Pacific Daylight Time) |
| | | YYYY  calendar year |
| *script* | = | name of shell script in which message is generated |
| *type* | = | ERROR | INFO | WARNING |
| *[...]* | = | text describing a condition of the type indicated |
| *PROC* | = | processor (e.g., 0MP, 5MP, 3FEP, 4BKUP) on which condition described by the text occurred |

## 3.5 Executing the Sendmail Update Script

1.  At the *Login GUI* window, login as the root user, which displays the *KDE Desktop* panel.

2.  Click the **Terminal Emulation (Eterm)** icon in the lower middle part of the *KDE Desktop* panel.

3.  Type the following commands from the 0MP root prompt:

    a.  **/etc/config/osupdate/msendmailupdate.sh**

    Press **<Enter>** for the next two prompts to accept the default options.  Detailed messages concerning the sendmail update will scroll across the display.  When the script completes, it will instruct you to enter the next command.

    b.  **mv /etc/config/osupdate/msendmailupdate.sh /etc/config/osdone**

   c.  **rsh 5MP** and repeat steps a and b.

   d.  **exit**

   e.  **exit**

4.  The *KDE Desktop* panel displays again. Click the **Logout** icon.

5.  The *Session prepared for logout* window displays. Click **Logout**.

6.  The *KDE Desktop* panel displays again for a few seconds, followed by the *Login GUI* window. Login as the "admin" user.

7.  The main *CRS GUI* window displays, followed by the *System Not Operational* dialog box. Click **OK**.


## PART 4 – CRS APPLICATION STARTUP AND VERIFICATION

1.  To start the CRS Build 9.0 Application, click the **System** menu and click **Start System**. The system displays the **Start CRS** dialogue box, which prompts the user for a response.

2.  Click **OK** to begin the startup sequence. The *CRS System is started* dialog box displays. Click **Close**.

3.  If the *Status* window is not displayed, open it using the *System* pull-down menu. Click the **System Status** menu selection.

4.  If the *Alert Monitor* window is not displayed, open it using the *System* pull-down menu. Click the **Alert Monitor** menu selection.

5.  In the *Status* window, verify the proper start of the CRS application. If the system does not start, notify the CRS Help Desk.

6.  Verify the proper and normal operation of the system. The database has not changed, so all weather messages that were previously broadcasting will continue to broadcast, unless they have expired.


## PART 5 – BACKUP OF VIP PRE-PROCESSOR SUBSTITUTION AND LOCAL DICTIONARIES (REQUIRES 2 BLANK DISKETTES)

**NOTE:** The dictionaries that are saved to diskette in this section will be used in Part 9 to check the words for pronunciation with the updated female (Donna) and new male (Tom) voices.

**5.1    Backing Up the Pre-Processor Substitution Dictionary**

1.    Place a blank formatted diskette in the floppy drive.  From the main *VIP* menu, click **Pre-Processor** to display the *Pre-Processor "Substitution Dictionary" Manager*.

2.    Click **Options**, which displays a pull-down menu.  From the pull-down menu, click **Save LOCAL Substitution Dictionary TO Floppy Disk**.

3.    A dialog box displays the following prompt:

      *Save the "SUBSTITUTION" dictionary TO floppy disk*?

      Click **Yes**.

4.    If the dictionary transfer is successful, a dialog box displays with the following message:

      *File Transfer Successful!  File saved on floppy as: "opsub.dic".*

      Click **OK**.

5.    Remove the **opsub.dic** diskette from the drive, label it as **opsub.dic**, and keep it in a safe place.  It will be used after the VIP 3.0.1 application is installed to check on the  pronunciation of the old dictionary words with the new voices.

6.    Click the red **X** to exit from the *Pre-Processor "Substitution Dictionary" Manager* window.  A dialog box displays asking if you want to save the changes before exiting.  This procedure assumes that no changes have been made to the dictionary.  Click **No**.


**5.2    Backing Up the Local Dictionary**

1.    If the VIP application is running (bottom of the main *VIP* menu displays *Running* on a green background), click **Stop**.  If the VIP application is not running, skip to step 3.

2.    The bottom of the main *VIP* menu displays *Stopped* on a red background.  The VIP application is stopped.

3.    Place a blank formatted diskette into the floppy drive.  From the main *VIP* menu, click **Dict Manager**.  The *Local Dictionary Manager* displays.

4.    Click **Options**, which displays a pull-down menu.  From the pull-down menu, click **Save Local Dictionary TO Floppy Disk**.

5.    A dialog box displays the following prompt:

      *Save the "LOCAL" dictionary TO floppy disk?*

      Click **Yes**.

6.  If the dictionary transfer is successful, dialog box displays the following message:

    *File Transfer Successful!  File saved on floppy as: "en-US-root.dic".*

    Click **OK**.

7.  Remove the **en-US-root.dic** diskette from the drive, label it as **en-US-root.dic**, and keep it in a safe place.  It will be used after the VIP 3.0.1 application is installed to check on the pronunciation of the old dictionary words with the new voices.

8.  Click the red **X** to exit from the *Local Dictionary Manager* window.  A dialog box displays asking if you want to save the changes before exiting.  This procedure assumes that no changes have been made to the dictionary.  Click **No**.

## PART 6 – CREATION OF VIP OS RESTORE DISKETTES (REQUIRES 2 TO 4 BLANK DISKETTES)

**NOTE:**  The original VIP field distribution package included 3 diskettes labeled "VIP OS Restore #1 - #3."  Diskettes 1 and 2 contain the Power Quest disk image software that is necessary to load the disk image on the VIP OS Restore CDs to the VIP hard drive.  Diskette 3 is a bootable diskette that is used to boot the VIP in case it cannot be booted from the hard drive.  Because the VIP operating system is being upgraded from Red Hat Linux version 7.1 to version 7.3, the old bootable diskette will no longer boot the VIP.  It is being replaced by the new bootable diskette that will be created in this section.  Label the new bootable diskette "VIP OS Restore #3" and dispose of the old one.  Additionally, a fourth bootable diskette that will be labeled "VIP OS Restore #4" will be created in this section.  The VIP OS Restore #4 diskette shall only be used (if necessary) during the designated steps of Part 8 of this software note.  After the installation, sites will use the new VIP OS Restore #3 diskette to boot their system in the event of a hard drive failure.  VIP OS Restore #7 CD will be used to create both VIP OS Restore #3 and #4 diskettes.  Sites that are unable to locate VIP OS Restore #1 and #2 diskettes will be able to create new diskettes as part of this section as well.

1.  Click **Console** (fourth icon from the left) at the bottom of the screen to display a shell window.

2.  Type the following:

    **su -**

    Enter the root password.

3.    Insert the *VIP OS Restore #7* CD into the CD-ROM drive.  If a file window opens, skip to step 4.  Otherwise, type the following:

**mount /mnt/cdrom**    (Make sure there is a space between "mount" and "/".)

4.    Type the following:

**cd /mnt/cdrom**    (Make sure there is a space between "cd" and "/".)

5.    Insert the formatted write-enabled blank diskette and type the following:

**dd if=./vipdsk3.img of=/dev/fd0**

(Make sure there is a space between "dd" and "if" and between "img" and "of".)

6.    When the procedure completes and the prompt returns, remove the diskette and label it "VIP OS Restore #3."  Keep it in a safe place with the other VIP OS Restore diskettes and CDs.  Dispose of the old VIP OS Restore #3 diskette.

7.    Repeat steps 5 and 6 to create the VIP OS Restore #4 diskette.  In step 5, the disk image to use is *vipdsk4.img*.  Sites that are unable to locate *VIP OS Restore #1 and #2* diskettes must repeat steps 5 and 6 using *vipdsk1.img* and *vipdsk2.img*, respectively.

8.    Type the following:

**cd /**                     (Make sure there is a space between "cd" and "/".)

**umount /mnt/cdrom**    (Make sure there is a space between "umount" and "/".)

**exit**

9.    Remove the *VIP OS Restore #7* CD from the CD-ROM drive.


**PART 7 – SHUTDOWN OF VIP BUILD 2.0.2 APPLICATION OPERATING SYSTEM**

1.    Click **File** in the upper left area of the main *VIP* menu.

2.    Click **System Shutdown**.

3.    A dialogue box displays asking if you want to shut down the VIP system.  Click **Yes**.  After a short time, the VIP computer shuts down.

**PART 8 – INSTALLATION AND STARTUP OF VIP OPERATING SYSTEM (RED HAT LINUX BUILD 7.3) AND BUILD 3.0.1 APPLICATION SOFTWARE**

**NOTE:**   1.   This procedure will take from 60 to 70 minutes to complete.

2.   The hard drive image includes both the OS and the VIP Build 3.0.1 application. To restore the hard drive image, use the VIP OS Restore diskettes numbered 1 through 4 and the new VIP OS Restore CDs numbered 1 through 7.  Upon successful restoration of the hard drive image, store the VIP OS Restore diskettes and the new VIP OS Restore CDs in a safe place.  Dispose of the old VIP OS Restore CDs.

**8.1   Restoring the Hard Drive Image**

1.   Insert the *VIP OS Restore #1* diskette into the floppy drive.

2.   Ensure that all VIP hardware connections are in place and turn on the power.

3.   After the *A:/>* prompt appears, insert the *VIP OS Restore #1* CD in the CD drive. Remove the *VIP OS Restore #1* diskette and insert *VIP OS Restore #2* diskette. Type **PQDI** and press **<Enter>**.  If any initial warning of partition problems appears, click **NO**.

4.   The *PowerQuest Image Center* screen displays.  Click **Restore Image**.

5.   A *Restoring An Image* window displays.  Click **Browse** and then click **Drives** and change from **A:Floppy Disk** to **C:Compact Disk**.

6.   Click **VIPV#.PQI** and then click **OK**.  Click **Next**.

7.   The *Restoring An Image/Select Image File Partitions* window displays.  Click **Select All**.  Then click **Next**.

8.   The *Select Destination Partition or Unallocated Space* window displays.  Click **Delete Disk Partitions**.

9.   The *Delete Partitions* window displays.  Click **Delete All**.  Then confirm by clicking **Yes**.  Finally, click **Close** in the *Delete Partitions* window.

10.   Click **Next** on the *Select Destination Partition or Unallocated Space* window**.**

11.   The *Ready To Restore Image File* window displays.  Click **Finish**.

12.   During the restore process, several progress messages display. The following list provides the correct response to each message:

a.   Click **Yes** if prompted by any *Moving past Cylinder 1023* messages.

b.   When prompted for *media 2*, insert the *VIP OS Restore #2* CD into the CD drive.  Click **OK.**  Repeat when prompted for *CDs #3 through #7* (*media 3* through *media 7).*

c.   Click **Yes** if prompted by any *Moving past Cylinder ####* messages.

13. At the conclusion of the procedure, you may see a *Restore Image* warning box displaying the following message:

*No active (bootable) partitions... Would you like to set an active partition now?*

Click **No**.

14. A *Restore Image* information box displays:

*Would you like to view results?*

Click **No**.

15. Click **Exit**.

16. When the display returns with a prompt**,** remove the diskette and CD from their respective drives.  Power down the VIP.

17. Power up the VIP.  If a blank text screen appears with a message stating there is no operating system, go to sub-step a.  Otherwise, go to sub-step b.

    a. Insert the *VIP OS Restore #4* diskette into the floppy drive.  Power down and then power up the VIP.  This will boot the VIP.

    b. The Red Hat Linux 7.3 Operating System will begin to boot, and *Kudzu Hardware Utility* will display one or more times.  If you booted from diskette, remove the diskette from the floppy drive.  Press **<Enter>** to continue.

    c. The *Hardware Removed* screen is displayed with *Generic Mouse (PS/2)* listed.  Press the **Right Arrow** key once to highlight *Keep Configuration*, and press **<Enter>**.  The screens in sub-steps d and e may or may not display, depending on the particular VIP video card you have.  If they do not display, skip to sub-step f.

    d. The blue *Kudzu* screen appears.  Under the top title line *Hardware Discovery Utility*, a lower title line reads *Hardware Removed* and lists the nVidia chipset/video card.  Press the **Right Arrow** key once to highlight *Keep Configuration* and press **<Enter>**.

    e. Another blue *Kudzu* screen appears with *Hardware Discovery Utility* and *Hardware Added*.  Press the **Right Arrow** key once to highlight *Ignore* and press **<Enter>**.

    f. The system will continue booting, and one of the following screens appears:

        1) A GUI Linux login screen.  (This is the screen that normally appears.)  In this case, skip to step 24.

        2) A blank text screen with a message stating there is no operating system.  In this case, go to step 18.

18. Insert the VIP OS Restore #3 diskette (the new one made in Part 6) into the floppy drive.  Power down and then power up the VIP.  This will boot the VIP.

19. At the Linux login prompt, login as **root** with the password **nws2002**.

20.     From the KDE desktop display, click the **xterm/shell** icon to display a terminal window.

21.     Type **lilo -v** and press **<Enter>**.

22.     Type **shutdown -h now** and press the **<Enter>** key.  This will shut down the operating system and power off the VIP.

23.     Remove the diskette from the floppy drive and repeat step 17.

**NOTE:**    1. Steps 24 through 35 will configure the VIP network address

24.     Type **root** and press **<Enter>**.

25.     Type root password **nws2002** and press **<Enter>**.

26.     Click **KDE Desktop Application Starter** (the big **K Wheel** icon) in the lower left section of the *KDE Desktop* panel.

27.     Click **System**.

28.     Click **Network Configuration**.

29.     In the *Network Configurator Window*, click **Active eth0 device**.

30.     Click **Edit.**  Change the IP address and default Gateway value to match the VIP entry in the 0MP */etc/hosts* file.  For example, the entry at the NWSHQ Test Bed site is 165.92.20.121.  Ensure the Netmask is **255.255.0.0**.

31.     Click **OK**.

32.     Click **Apply**.

33.     Click **Deactivate**.

34.     Click **Activate**.

35.     Click **Close**.

**NOTE:**    2. Steps 36 through 49 will configure the site-specific IP addresses in the VIP hosts file and change VIP passwords.

36.     Click **KDE Desktop Application Starter** (the big **K Wheel** icon) in the lower left section of the *KDE Desktop* panel.

37.     Click **Editors**.

38.     Click **KEDit**.

39.     Click **File**.

40.     Click **Open**.

41. In the *Location* box, type: **/etc/hosts**

42. Click **OK**. If there is a duplicate set of IP addresses, delete the second set.

43. Change the **entries** to match those for **VIP**, **0MP**, **5MP**, **as1**, and **as2** in the 0MP */etc/hosts* file. For example, the 0MP entry at the NWSHQ Test Bed site is 165.92.20.111. Also, change the entry for **as1f** so it is consistent with the site's subnet.

44. Click **File** and select **Save**.

45. Click **File** and select **Quit**.

46. Click the **Shell** icon (lower left area of the screen) to open a Shell window.

47. To verify the */etc/hosts* file, type **ping 0MP** and press **<Enter>**; then type **ping 5MP** and press **<Enter>**.

48. Type **passwd crs** and follow the instructions to enter the same crs user password used for 0MP.

49. Type **passwd root** and follow the instructions to enter the same root password used for 0MP.

**NOTE:** 3. Steps 50 through 55 correct the privileges on the */etc/hosts* file and add another Spanish special character to the *Xmodmap* file.

50. Type: **chgrp crs /etc/hosts**

51. Type: **chmod 664 /etc/hosts**

52. Type: **kedit /etc/X11/Xmodmap**

53. A new window displays labeled */etc/X11/Xmodmap - Kedit*. Scroll down to the end of the display and add the following at the bottom of the section labeled *Spanish VIP Support*:

    **keycode 47 = 59 58 252 220**

54. Click **File** and click **Save** to save the changes.

55. Click **File** and click **Exit** to exit the *Kedit* display. You may see some error messages in the shell display. If you do, ignore them and press **<Enter>** to continue.

56. Restart the system by clicking **KDE Desktop Application Starter** (the big **K Wheel** icon) in the lower left section of the *KDE Desktop* panel.

57. Click **Logout**. The *End Session* for root window appears.

58. Click **System** in the *X Login* box. Select the **Restart Computer** toggle.

59. Click **OK**. The system will reboot and the *Login* window appears.

**8.2    Setting Up Installation and Site Information, CRS Network Information, Voice Settings, and Audio FTP Configuration**

**NOTE:**    1.    Use the *VIP Setup Wizard* to enter installation and site information, CRS network information, voice settings, and if necessary, audio FTP configuration.


1.    Login as **crs** with the password set in step 48 of section 8.1.  Double-click the **Voice Improvement Processor Application** icon on the desktop.  The *VIPv3.0.1 Setup Wizard Welcome* window displays.

**NOTE:**    2.    The *Setup Wizard* will only appear the first time the user logs in with the **crs** user password.  Once the information in the *Setup Wizard* is entered, double-clicking on the **VIP 3.0.1** desktop icon will result in the display of the *main VIP menu*.  This information may be edited using the *Systems Settings* window available from the *main VIP menu*.

2.    Click **Next**.  The *VIPv3.0.1 Setup Wizard: Step 1* window displays.

**NOTE:**    3.    Parts of the VIP system contain licensed software.  You must read and accept the Speechify licensing agreement.  Since not all sites will use the .mp3 ftp capability, acquisition of this license is the responsibility of the site.  Information is provided in the agreement about the acquisition of this optional and inexpensive license.  ***All sites must accept the Speechify licensing agreement to continue with the setup.***

3.    Click the box next to the statement: "I understand the above disclaimer."  The *VIPv3.0.1 Setup Wizard: Step 2* window displays.  Click **Next**.

4.    Enter the installer's name in the *Name of installer* box.

5.    Select your site name from the scrollable list of sites.

**NOTE:** 4. Only 13 of 122 operational sites are licensed to use the Spanish Male (Javier) VIP voice. The VIP software will not allow any other sites to use the Spanish VIP voice. The following are Spanish VIP sites:

| | | |
|---|---|---|
| LOX - Los Angeles, CA | LWX - Washington, D.C. | EWX - Austin, TX |
| MTR - Monterey, CA | MFL - Miami, FL | BRO - Brownsville, TX |
| STO - Sacramento, CA | PDT - Pendleton, OR | EPZ- El Paso, TX |
| SGX - San Diego, CA | CAE - Columbia, SC | SJU - San Juan, PR |
| HNX - San Joaquin, CA | | |

*Sites that are not in the above list shall not use the VIP Spanish voice.*

6. Click **Next**. The *VIPv3.0.1 Setup Wizard: Step 3* window displays.

7. Enter the IP addresses for both the CRS 0MP and 5MP, and enter the CRS user name (**crs**) and the password used in step 1.

8. If you intend to use the VIP audio FTP function, you must also enter the Gateway IP address. This step is optional.

9. Click **Next**. The *VIPv3.0.1 Setup Wizard: Step 4* window displays. This window allows you to set the rate and volume of the "Tom" voice.

10. Use the slider bar to adjust the **default 0 rate** and **volume** of the "Tom" voice. To assist you in setting these values, two buttons are available to play and stop playing text in the window.

11. Click **Next**. The *VIPv3.0.1 Setup Wizard: Step 5* window displays. This window allows you to set the rate and volume of the "Donna" voice.

12. Use the slider bar to adjust the **default 0 rate** and **volume** of the "Donna" voice. To assist you in setting these values, two buttons are available to play and stop playing text in the window.

**NOTE:** 5. The *VIPv3.0.1 Setup Wizard: Step 6* window will only display for the Spanish VIP sites listed in the Note 4 box following step 5. All other sites should skip steps 13 and 14 below.

13. Click **Next**. The *VIPv3.0.1 Setup Wizard: Step 6* window displays. This window allows you to set the rate and volume of the Javier voice.

14. Use the slider bar to adjust the **default 0 rate** and **volume** of the Javier voice. To assist you in setting these values, two buttons are available to play and stop playing text in the window.

15. Click **Next**. The *VIPv3.0.1 Setup Wizard: Step 7* window displays. This window allows you to optionally configure the VIP for remote audio FTP transmission.

**NOTE:** 6. Remote FTP may be used to populate Web servers by providing audio for every message processed by VIP. Audio uploads are either 16 kHz, 16-bit multimedia .wav files or .mp3 files. ***This is not a standard CRS function; if you wish to use this feature, it is strongly recommended that you first contact the regional AWIPS focal point for approval.*** Otherwise, skip step 16.

16. Enter the user, password, IP address, and upload directory information for .wav file or .mp3 file. Then select **ON** to activate this function.

17. Click **Next**. The *VIPv3.0.1 Setup Wizard: Finished* window displays.

18. You have completed the VIP setup. Click on the **Finish** button.

19. The main *VIP* menu displays.

## 8.3 Starting Up the VIP Application

1. To run the VIP application, click **Start** on the main *VIP* menu.

2. At the *CRS Status* window on the CRS Master Console, verify that the *VIP* icon is a green arrow pointing up.

## PART 9 – LOADING OF VIP 2.0.2 DICTIONARIES AND TESTING OF WORD PRONUNCIATION

**NOTE:** The v2.0.2 Local and Substitution Dictionaries may contain words that are pronounced differently in v3.0.1. "Donna" has been updated; "Tom" has replaced "Craig"; and each voice has its own separate Local and Substitution Dictionaries. ***Therefore, as soon as it is convenient to do so, check the pronunciation of each word in both the v2.0.2 Local and Substitution Dictionaries. Be sure to check the pronunciation for both "Donna" and "Tom."*** In many cases, old dictionary entries are no longer needed and may degrade the quality of the voice and impact the performance of the system. Also, Local Dictionary entries for one English voice may no longer be needed for the other one.

The v3.0.1 software contains a porting function that allows you to test the pronunciation of each word (but not the v2.0.2 translation) in both the Local and Substitution Dictionaries that were saved to diskette in Part 5. If the pronunciation of a word is acceptable, the word must not be placed in the dictionary. If the pronunciation is not acceptable, the porting function allows the user to place the word and its v2.0.2 translation into the currently selected dictionary. The user must

**NOTE:** *(continued)*

check the pronunciation of the v2.0.2 translation under v3.0.1 for acceptability.  If the pronunciation is not acceptable, the user must make further adjustments to the pronunciation.

***You can only work on one voice at a time.  You MUST complete the "TOM" (English Male) voice first before proceeding to the "DONNA" (English Female) voice.***

### 9.1    Checking the Substitution Dictionary

1.    Place the diskette labeled "opsub.dic" containing the Substitution Dictionary made in section 5.1 into the VIP diskette drive.

2.    From the main *VIP* menu, select **Pre-Processor**.  This will display the *Pre-Processor "Substitution Dictionary" Manager* window.

3.    Click **Options** to display a pull-down menu.  From the pull-down menu, select **English Male Substitution Dictionary <Tom>**.

4.    Click **Options** to display a pull-down menu.

5.    From the pull-down menu, click **Port VIPv2.x Sub Dictionary**.  The *VIPv2.0 Pre-Processor/Substitution Dictionary Port* window displays.  The *Porting Instructions* window also displays.  Click **Close** to remove the *Porting Instructions* window.

6.    If a site has partially checked the list of words and saved the remaining words, the unchecked words will automatically appear in the *VIPv2.0 Pre-Processor/ Substitution Dictionary Port* window; skip to step 10.  If a dialogue box asking to upload the dictionary appears, skip to step 8.

7.    Click **Options** and select **Import VIPv2.x Substitution Dictionary from Floppy**.

8.    A dialogue box with the following question displays:

*Upload VIP2.x "opsub.dic" dictionary archive from the floppy drive?*

Click **Yes**.

9.    When the upload is completed, the following message displays:

*Upload Complete*

Click **OK**.

10.    If the *Overlap Existing opsub.dic* dialog box is not displayed, go to sub-step c.

a.    Click **Yes** in the *Overlap Existing opsub.dic* dialog box.

b. Click **No** in response to the *Save* dialog prompt in the *VIPv2.0 Pre-Processor/Substitution Dictionary Port* window.  This will prevent the current buffer from overriding the just-imported osub.dic file.

c. A list of words and translations display.

**NOTE:** Each word in the display must be checked for the new pronunciation.  You can play highlighted words on the highlighted sections of the list using the play and stop buttons on the button bar.  You may delete a word using the "-" button.  ***Pronunciations in the porting window are from the left-hand column and not the translation in the right-hand column.***  Words that are not pronounced correctly may be added to the Substitution Dictionary.  It is recommended that after each word is pronounced, it is deleted.  Sites that are not able to complete the pronunciation check in one sitting can save the remaining list of ported words to a file that may be checked later.  When the site is ready to check the pronunciation against the "Donna" voice, they simply repeat the porting function from the *opsub.dic* diskette to get a complete list.

11. Check the pronunciation of the word by highlighting it and clicking **Play**.

12. If the pronunciation is acceptable, skip to step 15.

13. Otherwise, double-click the word, and the *Sub Word Entry* window displays with the word and its translation.

14. Use the *Sub Word Entry* window to develop, test, and save the improved pronunciation.

15. Highlight the word and delete it using the "-" button on the *VIP* 2.0 Pre-Processor/Substitution Dictionary Port window.

16. Repeat steps 11 through 15 for each word.  If all words cannot be tested in one sitting, perform step 17.  Otherwise, skip to step 18.  ***Make sure you finish the "Tom" dictionary before proceeding to "Donna."***

17. Click **Save and Close** on the *VIP 2.0 Pre-Processor/Substitution Dictionary Port* window to save the remaining words and close the window.

a. Click on the **X** button on the **Word Entry** window.

b. Click on **Save** on the *Local Dictionary Manager* window and then click on the **Exit** button.

c. Click on **Yes** to save changes when prompted.

Repeat steps 2 through 16 at a later time.  ***Make sure you finish the "Tom" dictionary before proceeding to "Donna."***

18. ***Make sure you finish the "Tom" dictionary before proceeding to "Donna."***
Repeat steps 1 through 16 for the Female voice (Donna).  In step 3, take care to select the correct dictionary:

   **English Female Substitution Dictionary <Donna>**.

## 9.2 Checking the Local Dictionary

1. Place the diskette labeled "en-us-root.dic" containing the Local Dictionary made in section 5.2 into the VIP diskette drive.

2. From the main *VIP* menu, select **Dict Manager**.  This will display the *Local Dictionary Manager* window.

3. Click **Options** to display a pull-down menu.  From the pull-down menu, select **English Male Dictionary <Tom>**.

4. Click **Options** to display a pull-down menu.

5. From the pull-down menu, click **Port VIPv2.x Dictionary**.  The *VIPv2.0 Local Dictionary Port* window displays.  The *Porting Instructions* window also displays. Click **Close** to remove the *Porting Instructions* window.

6. If a site has partially checked the list of words and saved the remaining words, the unchecked words will automatically appear in the *VIPv2.0 Local Dictionary Port* window; skip to step 10.  If a dialog box asking to upload the dictionary appears, skip to step 8.

7. Click **Options** and select **Import VIPv2.x Local Dictionary from Floppy**.

8. A dialogue box with the following question displays:

   *Upload VIP2.x "en_us_root.dic" dictionary archive from the floppy drive?*

   Click **Yes**.

9. When the upload is completed, the following message displays:

   *Upload Complete*

   Click **OK**.

10. If the *Overlap Existing opsub.dic* dialog box is not displayed, go to sub-step c.

    a. Click **Yes** in the *Overlap Existing en_us_root.dic* dialog box.

    b. Click **No** in response to the *Save* dialog prompt in the *VIPv2.0 Local Dictionary Port* window.  This will prevent the current buffer from overriding the just-imported en_us_root.dic file.

    c. A list of words and translations display.

**NOTE:** Each word in the display must be checked for the new pronunciation. You can play highlighted words on the highlighted sections of the list using the play and stop buttons on the button bar. You may delete a word using the "-" button. *Pronunciations in the porting window are from the left-hand column and not the translation in the right-hand column.* Words that are not pronounced correctly may be added to the Substitution Dictionary. It is recommended that after each word is pronounced, it is deleted. Sites that are not able to complete the pronunciation check in one sitting can save the remaining list of ported words to a file that may be checked later. When the site is ready to check against the "Donna" voice, they simply repeat the porting function from the diskette to get a complete list.

11. Check the pronunciation of the word by highlighting it and clicking **Play**.

12. If the pronunciation is acceptable, skip to step 15.

13. Otherwise, double-click the word, and the *Word Entry* window displays with the word and its translation.

14. Use the *Word Entry* window to develop, test, and save the improved pronunciation.

15. Highlight the word and delete it using the "-" button on the *VIP2.0 Local Dictionary Port* window.

16. Repeat steps 11 through 15 for each word. If all words cannot be tested in one sitting, perform step 17. Otherwise, skip to step 18. *Make sure you finish the "Tom" dictionary before proceeding to "Donna."*

17. Click **Save and Close** (far left button) to save the remaining words and close the window.

    a. Click the **X** button in the *Word Entry* window.

    b. Click **Save** in the *Local Dictionary Manager* window and then click **Exit**.

    c. When prompted, click **Yes** to save changes.
    Repeat steps 2 through 16 at a later time. *Make sure you finish the "Tom"*

    *dictionary before proceeding to "Donna."*

18. *Make sure you finish the "Tom" dictionary before proceeding to "Donna."*
    Repeat steps 1 through 16 using the Female voice (Donna). In step 3, take care to select the correct dictionary:

    **English Female Dictionary <Donna>**

# Attachment B

# EMRS Report Sample

# Attachment B - EMRS Report Sample

```
A26 Detail Form - ESCM2, SILVER SPRING, MD :: EMRS ANALYST - Microsoft Internet Explorer
```

New A26    Commit A26    Place on Hold    Copy A26    Delete A26    Detail Report    Preference    Document Summary    Help

## GENERAL INFORMATION

NEW RECORD              WFO* DVN            Document No.* DVN30324000

| 1. Open Date | Open Time | 2. Op Initials | 3. Response Priority | | 4. Close Date | Close Time |
|---|---|---|---|---|---|---|
| 03/24/2003 | 08:00 | WSH | ○ Immediate   ○ Low <br> ○ Routine   ◉ Not Applicable | | 03/24/2003 | 12:00 |

**5. Maintenance Description**   437   characters left                    NWR/CRS

Upgrade CRS software to Build 9.0 and VIP software to Build 3.0

## EQUIPMENT INFORMATION

| 6. Station ID* | 7. Equipment Code | 8. Serial Number | | 9. TM | 10. AT | 11. How Mal |
|---|---|---|---|---|---|---|
| DVN | CRSSA | 001 | | M | M | 999 |

**Alert:**                                   **Time Remaining:** <br> (For Block 12 use only)

## 13. PARTS USAGE and CONFIGURATION MANAGEMENT REPORTING

| ASN | Vendor Part No. (New Part) | Serial Number (Old Part) | Serial Number (New Part) | New Row |
|---|---|---|---|---|
| | | | | Delete Row |

## 14. WORKLOAD INFORMATION

| a. Routine | | b. Non-Routine | | c. Travel | | d. Misc | | e. Overtime | |
|---|---|---|---|---|---|---|---|---|---|
| Hours | Minutes | Hours | Minutes | Hours | Minutes | Hours | Minutes | Hours | Minutes |
| | | | | | | 4 | 00 | | |

## MISCELLANEOUS INFORMATION

**15. Maintenance Comments**   673   characters left

Upgraded CRS and VIP software I.A.W. Communications Equipment Software Note 4

**16. Tech Initials** <br> WSO

## 17. SPECIAL PURPOSE REPORTING INFORMATION

| a. Mod No. | b. Mod Act/Deact Date | c. Block C | d. Trouble Ticket No. | e. Block E |
|---|---|---|---|---|
| S4 | 03/24/2003 | | | |

Commit A26      Place on Hold      Copy A26      New A26      Cancel

Internet